Market Mechanisms and User Fees in Transportation

PRELIMINARY DRAFT FOR DISCUSSION ONLY

This preliminary draft discussion paper is a work product developed by the consulting team for review and discussion by the Blue Ribbon Commission on Transportation. The contents are intended to provide the Commission members with factual background information and a balanced set of policy alternatives, including the pros and cons of these alternatives. This paper is one of a series and should be reviewed in the context of the entire series that, when taken together, presents a comprehensive overview of the state's transportation system.

This discussion paper series has been prepared primarily for Blue Ribbon Commission members new to these issues who wish to engage in a fundamental debate and for a more general audience of interested citizens who may wish to comment on the Commission's deliberations. This paper is intended to be provocative and to stimulate discussion of issues and options in funding transportation in this state. It questions the current ways of doing business, not for the sake of finding fault, but to allow consideration of other potential ways of thinking about basic funding issues that might be appropriate in the future.

INTRODUCTION

This paper considers the use of "market mechanisms" in funding transportation. Market mechanisms or user fees are charges in which the user of a service or product experiences a direct linkage between use of the good and payment for its use.

The Revenue Committee of the Blue Ribbon Commission on Transportation has been briefed on the parts of the existing transportation funding system. It has learned of the major tax sources available at the federal, state and local levels. Other discussion papers in this series have outlined issues and potential solutions in many of the existing major funding sources.

A broad look at the funding structure is provided in *Overview of Transportation Funding in Washington*; an overview of issues related to the motor fuel tax is provided in the issue paper, *The Distribution of Gas Tax to the State, Cities and Counties*. Local government revenues are discussed in the issue paper, *Local Sources of Funding City and County Transportation Needs*.

As understood by economists, a market is a place where buyers and sellers engage in exchange of information and in decisions about whether to buy or sell to each other. The primary factors people consider in making the decision are price and the availability of viable alternatives or substitutes. When supply and demand of a given commodity are in equilibrium, a market is said

to be stable. When a price is set too high or too low, there will be distortions in the marketplace, leading to incorrect levels of consumption or supply of a commodity.

In the transportation arena, price is said to regulate the supply and demand of travel or parking. For example, congestion is often described as a state of dis-equilibrium in which demand exceeds supply because price signals are set low and available substitutes are unattractive or unavailable to many users. The most common price signals in transportation are the price of gas, the price of parking, or the price of a bus or train ticket. A price signal is said to be effective when it directly affects a decision to use a particular mode of travel.

We know that when the price of gas goes up suddenly, people tend to drive less. Thus gas prices are a relatively direct price signal. (However, evidence also shows that gas prices can increase or decrease quite a bit without affecting travel behavior significantly, as has been the case in the last six months when oil market conditions have caused the price of gasoline at the pump to rise as much 25 cents per gallon.) A charge like the motor vehicle excise tax (MVET), which is not directly related to travel behavior and is paid only once a year, is not considered a very effective price signal because it is not closely linked with the travel behavior the signal is intended to affect.

The other variable in people's decisions about travel is the availability of alternatives. Some of the alternatives people may consider using in making a travel choice are:

- driving alone or together with others in a private car;
- switching to another mode, say, bus, rail or bicycle;
- selecting a different route or destination, for example, going to a shopping mall with free parking rather than to a department store downtown;
- or deciding not to travel at all, say, by working at home.

There are several main reasons we consider market-based pricing schemes in transportation. The first is to send powerful price signals to change people's travel behavior. For example, we can reduce people's demand for travel by upping its price -- this is the most common use of market pricing in transportation. By raising the price of a train ride, a certain percent of people will stop riding. By charging to travel on a certain road, people will either choose a different route or they won't travel at all -- thus reducing congestion on the roads.

Another main reason for considering pricing schemes is to generate new revenues. This enables us to pay for more supply, whether more buses or more roads or more parking spaces. A third reason to consider transportation pricing is that by linking a price directly to consumption of a good, the public will view it as a "user fee" -- or direct payment for value received. Sometimes this can make a revenue mechanism more palatable to the public. (Although the recent opposition to tolls might run counter to the usual support for user fees.)

While pricing mechanisms or user fees can be used to effect changes in travel behavior, from the point of view of the Revenue Committee, they can also be considered for the purpose of generating new revenues. Another discussion paper, prepared for the Blue Ribbon Commission

on Transportation Investment Committee, considers pricing as a tool to relieve congestion (*Road Pricing as a Solution to Congestion*).

ISSUE STATEMENT AND BACKGROUND

Could market mechanisms and user fees be more widely used to fund transportation in Washington?

Washington and the United States already use price signals in various ways. The U.S. has an existing highway system that is among the best developed of any in the world and gas taxes that are among the lowest. Thus, comparatively, supply is plentiful and prices are low. Traveling on most of America's roadways is generally free. These factors contribute to America's high quality of life and sense of freedom, when compared to many other countries. There is a sense, however, that our urban and suburban metropolitan areas may be approaching the limits of the available capacity and that the cost of adding infrastructure to maintain that quality of life is one we no longer wish to bear.

Although there are many places in the U.S. where toll bridges are found and, particularly on the east coast, toll roads are common, in Washington State toll bridges are viewed as a thing of the past and toll roads are not known. Similarly, in most places except urban downtowns, parking is free at our homes, our workplaces and at most shopping destinations. Roads, bridges and parking spaces in much of the western U.S. have been funded through general purpose taxes such as county road levies or through relatively modest per gallon gasoline taxes.

Another set of price signals is sent through federal policy. The Internal Revenue Service does not tax a free parking benefit provided by an employer as it does some other employer-provided benefits. But on the other hand, the IRS allows a business to take a tax write-off when the employer pays for an employee's free parking. All of these are examples of price signals that, together with the convenience and abundance of public roads, over the years have led to heavy reliance on the private auto. At the same time, the deterioration of aging facilities and the need for new infrastructure in built-out urban and suburban areas has added significantly to the costs of maintaining the system we have and adding increments of new capacity to it.

Where the private sector has become involved in providing transportation or parking infrastructure, it has tended to charge whatever the market would bear. Thus, bus, rail, marine and air travel and privately provided parking have a history of charging the user a fee for each use. When the public sector took over bus transit, trolleys, railroads or ferries, user fees were continued and have been accepted by the traveling public. Yet despite that, user fees for the use of roads and bridges are today considered unacceptable by many citizens.

Types of Market Mechanisms

Four broad kinds of user fee mechanisms that could generate new revenues and would tend to send more effective price signals for roadway use and parking are considered here: fuel fees,

road pricing, parking fees and mileage fees. These mechanisms could also potentially generate significant new revenues for transportation.[1] In the examples cited, user fees are set at a level that would have generated $420 to $440 million annually at 1994 traffic volumes in the four-county Puget Sound region. While there are other parts of the state with congestion levels high enough potentially to generate significant new revenues, data are available only for the Puget Sound region.

Fuel Fees

Gas taxes can be viewed as a classic user fee -- the user pays a small fee for each gallon of gasoline and in exchange is entitled to use the roads. In almost every country of the world, gas taxes are considerably higher than they are in the U.S. In some European countries, gas costs the equivalent of $4.00 a gallon, two and a half times what it costs here. Does that reduce congestion? No, all industrialized countries experience congestion, despite high fuel taxes. Do people drive less? That is very difficult to determine. The one thing that is apparent, however, is that high fuel taxes do raise significant amounts of money.

A Puget Sound Regional Council study calculated that in the Puget Sound region, at 1994 traffic volumes, a 40-cent gas tax increase would have reduced afternoon peak period trips by 1.2%. But the same tax increase would have generated $424 million a year. As a revenue generator, a large gas tax increase could potentially be a powerful tool. As a way to reduce congestion, it would have to be viewed as negligible in its effect.

If an individual driver travels 10,000 miles per year and gets an average of 25 miles per gallon, that would mean consumption of 400 gallons per year. At the current average price of $1.50 per gallon, that user would pay $600 a year or $50 a month for fuel. An increase of 40 cents a gallon in the fuel tax would bring the price of fuel to $1.90. The same user would now be paying $760 a year or $63 a month, an increase of $13 a month.

The current 23 cent per gallon gas tax generates about $33 million a year statewide. An increase of 40 cents would increase annual statewide revenues by $1.3 billion. As a revenue generating mechanism, the gas tax is quite productive and as a user fee, it makes sense to many people, despite the fact that many members of the public oppose its increase.

Road Pricing or Congestion Fees

Road pricing charges the motorist directly for using congested roads. Road pricing is a method of financing highways and reducing congestion by placing tolls on roads. Such tolls can vary with the level of congestion, the time of day or the length of the trip. Electronic toll collection now enables implementation of congestion pricing without travelers needing to stop at a

[1] All revenue figures cited are based on EcoNorthwest and Deakin, Harvey and Skabardonis: *Modeling Congestion Pricing in the Puget Sound*, Puget Sound Regional Council, 1994.

tollbooth or even slow down.[2] Road fees or congestion fees can be imposed on a particular roadway segment or bridge or on an entire region.

Route-Specific Congestion Fees. Examples could be a toll to travel over a bridge or over a particular stretch of road. Tolls are widely used to pay for specific facilities. Because they create an ongoing revenue stream, they can be used to back revenue bonds.

Region-Wide Congestion Fees. Some people have also referred to this concept as a "congestion relief district." Fees could be imposed in an entire region and would be most applicable to avoid having motorists simply switch routes. For example, if a toll were imposed on I-5 from Tacoma to Everett, people might switch to traveling on SR99 or they might choose regional arterials and city streets. So a region-wide congestion fee would be one that was applied to all roads within some defined set of regional boundaries. There are a number of potential ways to collect the fee. Collection could take place electronically based on varying rates pegged to travel behavior, congestion levels and time of day. Alternatively, a flat fee could be collected of all autos registered within the district boundaries and upon entering the district from outside.

Often when it is considered, traffic engineers propose to vary the fee based on how much congestion is present at any given time. During pm peak periods, for example, a fee might be 10 cents per mile on certain parts of the system that are most congested. At night the fee might disappear. The PSRC study cited above used an average of 7 cents per mile in peak periods and calculated that, in the Puget Sound, it would have generated about $436 million per year at 1994 traffic levels.

Road pricing has the potential to generate significant revenues and also to send fairly strong signals that may change people's behavior. It is viewed as equitable from the perspective of "he who uses, pays." On the other hand, lower income individuals who may have chosen to live at a distance from their workplace to be able to afford home ownership could end up paying higher road fees because they would have to travel farther on congested roads.

Examples of Road Pricing

Public/Private Initiatives Program. Washington's Public/Private Initiatives (PPI) in Transportation program was created by the state Legislature in 1993 as a route-specific congestion fee or toll concept that calls upon the private sector to build the infrastructure using tolls or user fees as a revenue stream to finance debt. In 1994, the state issued requests for proposals and received 14 project proposals from private companies totaling over $6 billion. Six projects were approved and negotiations began. The following year, as public concerns were raised, the authorizing legislation was amended to require an advisory election when public opposition was present.

Of the original six projects, one remains active today, the Tacoma Narrows Bridge, for which an advisory ballot was held in November 1998. The voters within the election boundaries supported

[2] EcoNorthwest, *Road Pricing: A Potential Solution to Congestion*, Blue Ribbon Commission on Transportation Investment Committee, June 18, 1999, page 64.

building the facility and imposing tolls on it, although citizens in the communities closest to the bridge were opposed in large numbers to the project as proposed and have continued to seek ways to end it.

The PPI program combined elements of road pricing and the time and cost savings of private sector project development. The goals of the original legislation were to supplement state revenues for needed projects, encourage and promote business and employment opportunities, and create sound economic investment opportunities for the private sector. The public sector would participate through contributions to environmental studies, right-of-way acquisitions and ensuring public protections. Project financing approaches could include the following:

- Private equity and taxable debt structure;
- Private equity and tax-exempt debt structure; and
- 100% tax-exempt financing structure, such as 63-20 financing[3].

The current plan for the Tacoma Narrows bridge PPI project is to build a parallel suspension bridge and impose a $3.00 toll in one direction. The EIS, final design and permitting are scheduled to be completed in 1999 and the new bridge is due to open to traffic in 2005.

The experience of the PPI program in Washington to date has resulted in a number of lessons learned for the state. Not all projects lend themselves to tolling -- traffic levels and financing considerations determine if a project is feasible. Public and political buy-in is necessary for a project to go forward successfully. Up-front state funds are essential to enable partnering with the private sector in an environment in which an election is part of the process and could cause a project to fail after the investment of private funds.[4]

High Occupancy Toll (HOT) Lanes. HOT lanes are high occupancy vehicle lanes that charge single occupant vehicles a fee to travel in them. An existing HOV lane that is underutilized and that offers an alternative to congested general purpose lanes can be converted to a HOT lane or HOT lanes can be built as brand new lanes in congested corridors where capacity is needed and travel time savings will offer an incentive to motorists to pay to use the new lanes. Pricing and collection of fees is electronic with the price changing based on the traffic level. During peak periods when each additional vehicle adds to the congestion, prices to the SOVs using the HOT lane are higher. The goal is to keep prices high enough to keep traffic flowing at optimal speeds.

The attraction of the HOT lane concept as a conversion from existing HOV lanes is greatest when the HOV lanes are underutilized and there is more capacity than there are HOVs to fill the available capacity. HOT lanes open up this capacity to people who are willing to pay a market price to travel at a higher speed. There are a number of HOT lanes in practice around the country today[5]:

[3] The 63-20 financing mechanism is authorized by federal IRS code and involves the use of a non-profit entity that issues tax-exempt bonds to finance a public facility in connection with a private development.

[4] Jerry Ellis, Director, Transportation Economic Partnerships Division, WSDOT, speaking to the joint meeting of the Revenue and Administration Committees, May 12, 1999.

[5] More on this topic can be found in EcoNorthwest, *High Occupancy Toll Lanes: A Potential Solution to Congestion*, Blue Ribbon Commission on Transportation Investment Committee, June 18, 1999, page 40.

SR 91 Express Lanes in Orange County. This is a 10-mile long privately funded and managed toll facility that opened in 1995. It consists of four inside lanes, two in each direction. The toll charge varies between 75 cents and about $3 per trip depending on time of day. HOVs with three or more people traveled free for the first few years and now pay half price. In the HOT lanes, people experience travel time savings of 12-13 minutes per 10-mile trip, with speeds of 65 mph vs. 32 mph in the free, general-purpose lanes. This is the first fully automated toll road in the U.S. Drivers purchase an in-vehicle transponder debit card, usually in increments of $50. As they drive through the electronic lane, sensors deduct the appropriate amount from their account.

I-15 HOT Lane Conversion, San Diego. In December 1996, an existing eight-mile, two-lane HOV facility was converted to a HOT lane. A limited number of drivers were offered the opportunity to purchase a $70 monthly express pass to use the HOT lanes during peak periods. The demand for permits far exceeded the number sold. In 1998, electronic tolling was implemented and the program went to "dynamic" pricing which, instead of a fixed toll uses a fluctuating rate based on the amount of actual traffic at a given time. An electronic message board displays the fare to drivers at the entrance. Per trip charges range from 50 cents to $4. Users experience a time saving of 10-20 minutes per trip.

Parking Fees

If a driver can't park his car upon arriving at his destination, he won't drive there. Or if the cost of parking is too high, he may choose not to drive the car to that destination except when he absolutely has to. Parking fees can be used in a variety of ways to raise revenues and to restrict travel.

Site-Specific Parking Fees. Husky Stadium or Seattle Center event parking are good examples of a "captive" parking audience where the supply is limited and the demand is high, so the market will bear a high price. The cost to park, especially a single occupant vehicle, is high. Motorists may choose to carpool, park somewhere else and walk or take a shuttle or not even go to an event. Private operators can use price signals for high demand parking situations like these. Public entities are sometimes reluctant to do so because considerations other than market pricing may be present.

Commercial parking tax. The local option commercial parking tax was authorized in 1990 for county and city implementation. The tax is authorized to be levied on commercial parking operators, as opposed to employer-related parking. It has not been widely used because it is feasible primarily in dense urban areas, and opposition to the tax has been significant. During the 1997 legislative session, the City of Seattle attempted to broaden the commercial parking tax to include employer-sponsored parking. The bill was opposed by business interests and died. The major reason for the opposition is that it is feared that such a tax would simply drive business people or shoppers to areas with free parking, generally in the suburbs around cities. There are a few places where a commercial parking tax has worked thus far, primarily where there is a captive parking audience, like at Sea-Tac Airport.

SOV Commuter Parking Fee. The concept of a commuter parking fee is one in which a flat fee is charged all employed people who drive alone to work in a specific area, such as a central business district, regardless of whether the commuter parks for free or the commuter or his employer pay for parking. For example, in the 1994 PSRC study, it was calculated that a daily commuter parking charge of $1.70 would be needed to generate the same $438 million that the region-wide congestion fee would.

Mileage Fees

Mileage fees are charges imposed on the auto owner as a flat fee per mile that the car is driven. Mileage is often called "vehicle miles traveled" or VMT.

VMT Charge. The PSRC study found that in the Puget Sound about $430 million a year could be generated by charging all drivers 2 cents per mile driven on the region's roads. From the auto owner's perspective, that would be $200 a year for an average driving distance of 10,000 miles, or about $17 a month to use the roads. Especially people who have a long commute might perceive an incentive to change their driving habits. Options could be to switch to a four-day work week, to telecommute, to switch to alternate modes like carpooling or transit or, long term, to consider changing either their place of work or their place of residence.

VMT charges have not been implemented anywhere in this country and collection methods have not been developed. If a mileage charge were imposed on specific roadways, it could be measured and collected electronically like a congestion fee or toll. If it were to be collected statewide in lieu of other vehicle-related charges, like in the following example, it would have to rely on odometer readings, a method that might be subject to abuse.

MVET and VMT Blended Charge. Currently, vehicle owners in Washington pay an annual motor vehicle excise tax based on the value of their cars. The tax is paid once a year, together with the annual registration fee and, as evidenced by Initiative 695, the MVET is widely disliked because it is perceived as unfair and too high. If I-695 were to pass, $570 million per year in transportation revenues from that source would disappear.

Another way to charge vehicle owners for their use of the roadway network might be a new blended charge that was based partly on the car's value and partly on how many miles the car is driven per year. The price would be linked more closely to people's travel behavior, thus sending more appropriate price signals than the MVET does. Such a blended charge would mean a shift to more of a user fee-based system and away from the property tax-based system that is unrelated to the consumption of transportation system capacity.

Arguments For and Against Using Market Mechanisms

A wide variety of market mechanisms exists. Their implementation is likely to be difficult in all but very severely congested areas. While there is much anecdotal evidence of public support for user fees as a concept, specific pricing or parking fee proposals in Washington have met with

strong opposition from affected communities and businesses. Following are some of the major arguments used for and against their use.

Arguments For:

- Many of the user fee proposals can generate significant new revenues.
- User fees are viewed as fair because those who pay are those who benefit.
- User fees can send price signals that reduce the demand for roadway capacity.
- User fees can result in increased efficiency and predictability in the use of roads.
- User fees can create incentives to carpool, use transit or otherwise change travel behavior.

Arguments Against:

- There has been a negative perception by the public and low political acceptance of most user fee proposals.
- There is a popular belief that existing transportation taxes (gas tax, MVET) already generate significant funding.
- User fees represent an unfair burden on lower income people.
- There are concerns that traffic will be diverted from newly priced roads to unpriced ones, simply spreading congestion problems around.

POTENTIAL SOLUTIONS

Potential new ideas have been proposed that could be implemented with some amendatory legislation within the framework of Washington laws and experience.

Road or Usage Pricing

Congestion Relief Districts. The concept of a congestion relief district is a special purpose district in a heavily congested region that would use locally imposed taxes or user fees specifically to fund congestion "choke" points, new capacity or technology solutions. A congestion relief district could be drawn at jurisdictional boundaries such as city or county lines, at a county's urban growth boundary, or it could be broader, as in a multi-county regional transportation authority. Such a district could use any number of different pricing schemes, including a locally voted gas tax, tolls or a VMT charge. While non-user fee revenue sources such as a sales tax or property tax could also be used, a user fee-based mechanism could address two issues at once: generate revenue and influence travel behavior. Since the Puget Sound region now has experience with the Regional Transit Authority as a model, a multi-county, special-purpose transportation funding district for non-transit uses could easily be developed.

Parking Fees

Commercial/commuter parking charge. Using the existing local option commercial parking tax authority, a city or county could levy a charge on any commercial parking where there is a financial transaction. A recent discussion paper prepared by City of Seattle staff explored the

option of levying a charge on commercial parking, including parking provided as part of a building office lease arrangement. Exempted would be free parking provided by an employer on employer-owned property and free parking provided to customers or clients. The paper suggests focusing on commuters by including options such as the following:

- Levying the charge only on parking before 9:00 am;
- Outlawing reduced-rate "early bird" parking discounts.[6]

Cashing out employer-provided parking. Cashing out employer-provided parking is a concept that proposes that employees could choose to receive the cash value of their free parking if they chose to arrive at work by bus or carpool. Employers are held harmless because they presumably already pay for the parking in any case. Employees benefit because they receive the cash value of their parking benefit by changing their travel behavior. While this option is not beneficial as a revenue generator for the public sector, it could potentially be a tool for enabling reduced parking with new developments in urban areas or as an additional tool to meet commute trip reduction goals.

Pricing Alternatives

If one of the major reasons that roadways are congested is that alternatives are either unavailable or unattractive, then another intervention into the market for transportation would be to reduce the price of alternatives or make them more convenient to use. The convenience and availability issue is best addressed by increasing the supply of bus or rail transit or making car and van pools more attractive as options. These measures are already being actively implemented in congested areas of the state.

Another option for consideration is to make the alternatives free to the user to encourage their use. Programs like the U-Pass, a free monthly or annual transit pass provided to all students, faculty and staff at the University of Washington and at Washington State University, provide strong incentives to avoid the cost of driving and to patronize the alternative mode. A "Downtown Pass" or a "Large Employer Pass" could be new variants on the model. While many employers already subsidize transit passes, new partnerships with private employers, property owners or downtown associations could be the source of funding for the increased use of free pass programs.

[6] City of Seattle Budget Office Policy Paper, *A Transportation User Fee Proposal*, June 14, 1999.